

Diagnostics

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Outline



- **Common Problems / Common Causes**
- **SSI&T Diagnostic Tools**
- **Diagnostic Advice**
- **Problem Tracking / Reporting**

Compile/Link Problems



The Science Software fails to compile/link.

Possible causes:

- **Code**
- **Compiler Options**
- **Include Files**
- **Libraries**

Failure to Complete



The Science Software compiles and links, but does not run to normal completion.

Possible causes:

- Code
- Environment
- Inputs (i.e., data, Process Control File (PCF), Metadata Control File, Data Dictionary)

Incorrect Output



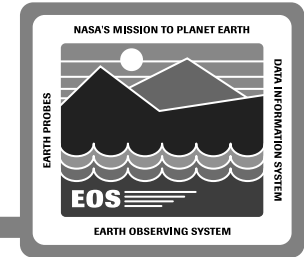
The Science Software output is not correct.

- This will be determined by the Instrument Teams!

Possible causes:

- Code
- Compiler options
- Libraries
- Input parameters and files

SSI&T Diagnostic Tools



- **Checkers**
 - PCF, prohibited functions
- **File Comparison Tools**
- **Data Visualization Tools**
- **Interactive Debugger**
- **Science Software and ECS Log Files**
- **You**

File Comparison Tools



- ASCII
- HDF
- Binary

Data Visualization Tools



- **EOSView**
 - Data and Metadata
- **IDL**
- **Text Editors / MS Word**

Interactive Debugger



Part of CASEvision

- Set break points
- Execute a block of statements, then halt
- Single step
- Examine variables / change values
- Examine file status

Caveats

- Code must be compiled without optimization
- Cannot be used within PDPS prototype

Log Files



- **PGE-produce Log Files:**
 - **LogStatus...** all error and status information concerning a program.
 - **LogUser...**a subset of messages of level or type "_U_" or "_N_" which are of particular interest to the user.
 - **LogReport...**arbitrary message strings sent by the PGE software (not related to the toolkit functions).
- **Management Subsystem Log File**
 - Events reported by agents to HP Openview

What will you do? Who do you call?



- **Identify Problem**
 - Examine Log Files
 - Check paths and other environment variables
 - Verify that the inputs are correct
- **Correct Problem**
 - If problem is incorrect input parameters/files or environment variables, correct and rerun
 - If problem appears to be in the Science Software, verify with the appropriate IT representative.
 - If the problem appears to be in Ir1, verify with M&O System Administrator.

Science Software Problem Tracking



- Problems identified in the science software will only be entered into a spreadsheet for the record.
- Corrective actions or workarounds will be recorded as well.
- The spreadsheet will be provided to the IT as a record of the identified science software problems, and not be used by ECS or the DAACs for ensuring resolution of any problems identified.
- Spreadsheet fields include

Date entered
PGE identifier
Problem Description
Identified by (person)
Detection Method

Related problems identified
Recommended change (optional)
Change implemented (optional)
Date change implemented (optional)
Authorizing person (optional)

ECS Nonconformance Reporting



- **Verify with the M&O System Administrator that the problem is with ECS hardware, software or COTS.**
- **If confirmed, access the WWW interface to the ECS NCR system**
 - Using WWW browser, open URL
<http://newsroom.hitc.com/sit/ddts/ddts.html>
- **Enter NCR information**
- **Submit NCR**